

# Machine Learning and Data Science

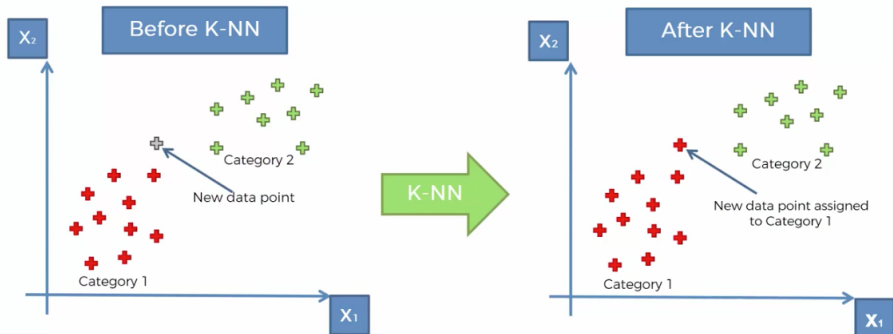
## $k$ plus proches voisins ( $k$ -NN)

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# K-NN Intuition

# What K-NN does for you



# How did it do that ?

STEP 1: Choose the number  $K$  of neighbors



STEP 2: Take the  $K$  nearest neighbors of the new data point, according to the Euclidean distance



STEP 3: Among these  $K$  neighbors, count the number of data points in each category

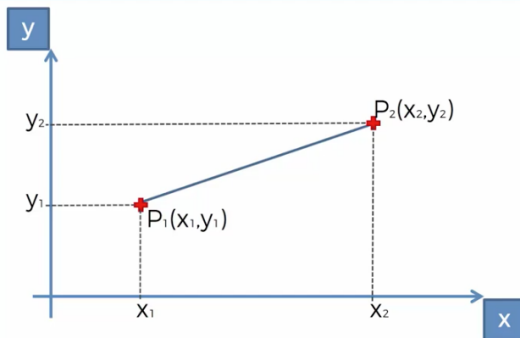


STEP 4: Assign the new data point to the category where you counted the most neighbors



Your Model is Ready

# Euclidean Distance



$$\text{Euclidean Distance between } P_1 \text{ and } P_2 = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

# K-NN algorithm

STEP 4: Assign the new data point to the category where you counted the most neighbors

